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A SMALL ENTERPRISE WELL KEPT

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GOVERNMENT MAKES REPORT

Extensive Investigations of P. E. Fuller of the United States Department of Agriculture is Very Flattering.

The Mimbres Valley proper is the terminus of the Mimbres river, it being an extensive folson or basin, comprising over 250,000 acres of land.

The Mimbres river heads in the Black range of mountains in Grant county on the south of the continental divide, running south a distance of 75 miles, thence continuing east and south some 45 miles, where it terminates in the Palomas lakes, Old Mexico. It is a notable example of a stream whose water is almost totally lost to underflow; only during the most torrential floods does it become a live stream to the southern boundary line of New Mexico. Many canyons and draws contribute their water to the Mimbres underflow from the mountains west of the Mimbres river, percolating into the sand and gravel bed pans at the mouth of the canyons.

With the practice of irrigation the fattening of live stock will form one of the principal industries, and will offer inducements to the dairy industry. The possibilities of fruit raising will no doubt result in the erection of canning factories.

The climatic conditions in the Mimbres Valley make it an ideal residence section and the social advantages are excellent.

The elevation is 4,300 feet above mean sea level. The water sheds of the Mimbres river proper include the west slope of the Black range, the south slope of the Continental divide, the west slope of Cook's ridge and Hanover and Black peaks, while the Silver City drainage area, which is also contributary to the Mimbres Valley underflow, includes the south and east slopes of the Pinos Altos, Bear and Ballock peaks, and the east slope of the Burro mountains. The above described drainage area is that which contributes to the Rio Mimbres north of Deming, while south of Deming the Cedar Grove range, the Hatchet and Florida mountains, the east slope of Cook's ridge, Sierra Magdalena, and many smaller mountains contribute the water from their slopes into the basin of the Mimbres Valley.

It is calculated therefrom that the catchment area comprising the sheds which drain into the Mimbres Valley north and west of Deming includes about 2,900 square miles, and of this area about 1,150 square miles is mountainous, having an elevation of 6,000 to 8,000 feet above sea level. The total area which may be construed as drainage between the Little Hatchet mountains on the west and the Portilla mountains on the east, from the northern source of the Mimbres river to the Old Mexico line, includes 5,350 square miles.

In Senate Document No. 11, Fifty-second congress, first session, page 224, is given a brief report of the investigations made by L. Clapp, jr., C. E., who measured the flow of the Mimbres river at King's ranch, 30 miles north of Deming. The report says in part: "The indications for a large underground flow are exceptionally good. The lower Mimbres is believed to be an underground river; in that case the surface water is only the surplus appearing after the underground channel is surcharged."

Referring to the land Mr. Fuller says:

The surface is remarkably level except for the uniform slope towards the river channel, and has ample fall to irrigate properly.

Underlying this soil is the harder clay loam of the recent geological periods, and it is this condition which makes the Mimbres Valley most ideal from an irrigation standpoint. The heavier soil, holding the moisture, while the lighter top soil, being more open and porous, receives and transmits the moisture to the lower soil, which, however, due to the slope toward the river channel, and which was found from levels to be 15.5 feet per mile, provides excellent drainage which prevents water logging.

Due to the greater coarseness of the formation at lower depths, whereby the friction to the flow is less, and the water plane rises when each succeeding stratum is penetrated, it is doubtful if a strong artesian flow could be obtained within the area occupied by the mountain ranges described, though it might be possible to secure a limited artesian flow just above the barrier mentioned.

There is no evidence of sodium carbonate (black alkali) in any of the soil.

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A RICH PUMPING DISTRICT

Southwest Trail in Its September Number Exploits the Wonderful Resources of the Lower Mimbres Valley.

The following article which appeared in the September number of the Southwest Trail, published by the Rock Island lines, of which there were 80,000 of this issue, clearly sets forth the wonderful possibilities of pumping for irrigation in the lower Mimbres Valley:

"Among the districts that get their water by pumping none impressed the investigators more favorably than the lower Mimbres Valley at Columbus, New Mexico. This town, scarcely two years old, is located within a short distance of the Mexican boundary, 74 miles west of El Paso, on the line of the El Paso & Southwestern System. It is the only port of entry between El Paso and Douglas, Arizona. For some years before Columbus grew into a town it was a cattle shipping point, the stock from the Palomas ranch, across the border in Mexico, being brought here for loading.

"Around Deming, N. M., 10 miles north of Columbus, the underflow has been successfully pumped and used for irrigation for several years. Not until recently however, has it been discovered that the best source of supply lay nearest the Mexican boundary. Within the last two years numerous wells have been sunk in and around Columbus, with astonishing results. With an easy lift of from twenty to fifty feet wells are being used for irrigation that flow from 500 to 1,600 gallons a minute. The Pierce well, about three miles from Columbus, has a flow of about 1,200 gallons and produces enough water to irrigate 200 acres. There is a lift of only nineteen feet. Mr. E. A. Pierce, the owner, uses a fifteen horsepower gasoline engine. His well is 250 feet deep, and the water comes up through an eight inch casing.

"On the A. O. Bailey ranch there is a well 185 feet deep in which the water comes within three feet of the top. It has a flow of 1,800 gallons a minute, pumped by a gasoline engine. Dozens of other wells in the district have a good flow, which is being used for irrigation, and on other ranches drilling is in progress. The district is new, but already results may be seen on many of the farms. It does not take long for the water to make a showing in a region that has such excellent climatic conditions.

"It is claimed for the Columbus district that its water supply is absolutely inexhaustible, and there are surface indications to bear out that theory. The topography of the country shows Columbus to be near the center of a vast basin. From the north comes the underflow of the disappearing Mimbres river, which drops out of sight soon after it leaves the Black mountains. This stream drains 1,400 square miles of mountain country that has a high annual rainfall. Its subterranean course runs southward through sand and gravel, and it outcrops in a chain of lakes just across the international boundary in Mexico. The first of these lakes is but three miles from the town of Columbus. From the south, in Mexico, the drainage is also northward, the chain of lakes being at the lowest point of this basin. Abrupt mountain ranges skirt the basin, and it catches the flood waters from the Floridas, the Tres Hermanos, Cook's range and other mountains. At almost any point in the basin water is found at from 100 to 200 feet, and it would not be surprising if an artesian flow were struck before long. The district is so new that the people do not yet know what they have.

"There is at hand about 100,000 acres of cultivable land that will be enormously productive when the water is applied. The rainfall is too light for successful dry farming, but a well on a farm pumping from 600 to 1,800 gallons a minute, assures wealth and independence to the owner. In fact, there is nothing so independent as to have *your* irrigation supply, in inexhaustible quantities, right on *your* own farm, where your water title cannot be attacked in the courts, and you can use *your* water when *you* need it. The tendency in such districts, of course, is to use too much water, but the inexperienced irrigationists soon learn the lesson of economy.

"The cost of drilling a well and installing a pumping plant runs from $1,200 to $1,500, according to depth of well. The Pierce ranch was bought by its present

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